

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

| | | |
|--|--|--|
| Applicant's or agent's file reference LW8081PC | FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below. | |
| International application No. PCT/KR 03/02662 | International filing date (day/month/year) 5 December 2003 (05.12.2003) | (Earliest) Priority Date (day/month/year) 9 December 2002 (09.12.2002) |
| Applicant SAMSUNG ELECTRONICS CO LTD | | |

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 4 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing:
- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of invention is lacking** (See Box II).

4. With regard to the **title**,

- ☒ the text is approved as submitted by the applicant.
- ☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

- ☐ the text is approved as submitted by the applicant.
- ☒ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.: 3

- ☒ as suggested by the applicant. ☐ None of the figures.
- ☐ because the applicant failed to suggest a figure.
- ☐ because this figure better characterizes the invention.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/KR 03/02662-0

Box III TEXT OF THE ABSTRACT (Continuation of item 5 of the first sheet)

A conductive bump including a plurality of protrusion members (251) and a conductive layer (252) formed on the protrusion members is disposed on a TFT substrate (200). Each of the protrusion members is disposed on an electrode pad (270y,b, 280c,b) in a pad region (292,293) of the TFT substrate, and the conductive layer is electrically connected to the electrode pad. A non-conductive resin (600) is disposed on the conductive bump, and a driving IC (500) is thermally compressed on the conductive bump. Therefore, the electrical contact characteristic between the driving IC and the electrode pad is improved.

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International application No.
PCT/KR 03/02662-0

CLASSIFICATION OF SUBJECT MATTER

IPC⁷: G02F 1/1345, G09F 9/35, H01L 21/603, H01L 23/485

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC⁷: G02F, G09F, H01L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

Epodoc, WPI, PAJ, TXT

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|----------|--|-----------------------|
| X | EP 0475519 A (PHILIPS) 18 March 1992 (18.03.92) <i>columns 1,4,5, figures.</i> | 1,2,4,7,12 |
| Y | <i>column 5.</i> | 6,8,9,10,11 |
| X | JP 2001 267371 A (HITACHI LTD) 28 September 2001 (28.09.01) <i>description, figures.</i> | 1,3,5,7,12 |
| Y | EP 0827190 A (IND TECH RES INST) 4 March 1998 (04.03.98) <i>claims, figures.</i> | 6,8,9,10,11 |
| A | JP 2002 244146 A (IND TECH RES INST) 28 August 2002 (28.08.02) | 1,5,7,13 |
| ---- | | |

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents:

„A“ document defining the general state of the art which is not considered to be of particular relevance

„E“ earlier application or patent but published on or after the international filing date

„L“ document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

„O“ document referring to an oral disclosure, use, exhibition or other means

„P“ document published prior to the international filing date but later than the priority date claimed

„T“ later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

„X“ document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

„Y“ document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

„&“ document member of the same patent family

Date of the actual completion of the international search

9 February 2004 (09.02.2004)

Date of mailing of the international search report

10 March 2004 (10.03.2004)

Name and mailing address of the ISA/AT

Austrian Patent Office
Dresdner Straße 87, A-1200 Vienna

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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/KR 03/02662-0

| Patent document cited in search report | | | Publication date | | Patent family member(s) | | Publication date | |
|---|---|------------------|---------------------|---|----------------------------|--|---------------------|--|
| EP | A | 475519 | US | A | 5877833 | | 1999-03-02 | |
| | | | DE | T | 69128388T | | 1998-05-28 | |
| | | | DE | D | 69128388D | | 1998-01-22 | |
| | | | EP | A | 0475519 | | 1992-03-18 | |
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| EP | A | 827190 | EP | A | 0827190 | | 1998-03-04 | |
| | | | US | A | 5393697 | | 1995-02-28 | |
| | | | EP | A | 0689240 | | 1995-12-27 | |
| JP | A | 20012673 71A2 | none | | | | | |
| JP | A | 20022441 46A2 | none | | | | | |